

SEQUENCE LISTING

<110> Shyjan, Andrew W.

<120> COMPOSITIONS AND METHODS FOR THE DIAGNOSIS, PREVENTION
AND TREATMENT OF TUMOR PROGRESSION

<130> 07334/004005

<140> US 09/181,030

<141> 1998-10-27

<150> US 08/862,442

<151> 1997-05-23

<150> US 08/623,679

<151> 1996-03-29

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tcagcaaca caccagagc tacccaacag actcctatgg gattcttgaa ttccagggtg	300
ggggttactc caataaagcc atg tac atc cga gtc tcc tac gac acc aag cca	353
Met Tyr Ile Arg Val Ser Tyr Asp Thr Lys Pro	
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gat tcc ctg ctc cac ctc atg gtg aag gac tgg cag ctg gag ctc ccg	401
Asp Ser Leu Leu His Leu Met Val Lys Asp Trp Gln Leu Glu Leu Pro	
15 20 25	

aag ctc ttg ata tct gtg cac gga ggc ctc caa agc ttc gag atg cag Lys Leu Leu Ile Ser Val His Gly Gly Leu Gln Ser Phe Glu Met Gln 30 35 40	449
tcc aaa ctg aag cag gtg ttt ggg aaa ggt ctg atc aag gct gcc atg Ser Lys Leu Lys Gln Val Phe Gly Lys Gly Leu Ile Lys Ala Ala Met 45 50 55	497
acc acg ggg gcg tgg atc ttc acc ggg ggt gtg agc act ggt gtc gtc Thr Thr Gly Ala Trp Ile Phe Thr Gly Gly Val Ser Thr Gly Val Val 60 65 70 75	545
agc cat gtg ggg gat gcc ttg aaa gac cac tcc tcc aag tcc aga ggc Ser His Val Gly Asp Ala Leu Lys Asp His Ser Ser Lys Ser Arg Gly 80 85 90	593
cgg ctc tgt gct ata gga att gct ccc tgg ggc atg gtg gag aac aag Arg Leu Cys Ala Ile Gly Ile Ala Pro Trp Gly Met Val Glu Asn Lys 95 100 105	641
gaa gac ctg att gga aaa gat gta aca aga gtc tat cag acc atg tcc Glu Asp Leu Ile Gly Lys Asp Val Thr Arg Val Tyr Gln Thr Met Ser 110 115 120	689
aac cct ctg agc aag ctc tct gtg ctc aac aat tcc cac act cac ttc Asn Pro Leu Ser Lys Leu Ser Val Leu Asn Asn Ser His Thr His Phe 125 130 135	737
atc ttg gct gac aac ggc acc ctg ggc aag tat ggt gct gag gtg aag Ile Leu Ala Asp Asn Gly Thr Leu Gly Lys Tyr Gly Ala Glu Val Lys 140 145 150 155	785
ctt cga aga cag ctg gaa aaa cac atc tcc ctg cag aag atc aac aca Leu Arg Arg Gln Leu Glu Lys His Ile Ser Leu Gln Lys Ile Asn Thr 160 165 170	833
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ctg cgg gac cag ctt cta gtt acc att cag aaa aca ttt aat tac agc Leu Arg Asp Gln Leu Leu Val Thr Ile Gln Lys Thr Phe Asn Tyr Ser 240 245 250	1073
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Lys	Lys	Glu	Leu	Val	Thr	Val	Phe	Arg	Met	Gly	Ser	Glu	Gly	Gln	Gln	
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gat	gtc	gag	atg	gca	att	tta	act	gcc	ttg	ctc	aaa	gga	acc	aac	gca	1217
Asp	Val	Glu	Met	Ala	Ile	Leu	Thr	Ala	Leu	Leu	Lys	Gly	Thr	Asn	Ala	
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tca	gct	cca	gat	cag	ctg	agc	ttg	gcc	ctg	gct	tgg	aac	cgg	gtc	gac	1265
Ser	Ala	Pro	Asp	Gln	Leu	Ser	Leu	Ala	Leu	Ala	Trp	Asn	Arg	Val	Asp	
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ata	gcg	cga	agc	cag	atc	ttc	gtc	ttt	ggc	cca	cac	tgg	ccg	cca	ctg	1313
Ile	Ala	Arg	Ser	Gln	Ile	Phe	Val	Phe	Gly	Pro	His	Trp	Pro	Pro	Leu	
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gga	agc	ctg	gcc	cct	cct	gtg	gac	acc	aaa	gcc	gca	gag	aag	gaa	aag	1361
Gly	Ser	Leu	Ala	Pro	Pro	Val	Asp	Thr	Lys	Ala	Ala	Glu	Lys	Glu	Lys	
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aag	cca	ccc	aca	gcc	acc	acc	aag	ggg	aga	gga	aaa	gga	aaa	ggc	aag	1409
Lys	Pro	Pro	Thr	Ala	Thr	Thr	Lys	Gly	Arg	Gly	Lys	Gly	Lys	Gly	Lys	
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Lys	Lys	Gly	Lys	Val	Lys	Glu	Glu	Val	Glu	Glu	Glu	Thr	Asp	Pro	Arg	
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gat	gct	ctt	gtc	cta	gat	cgg	gtg	gac	ttt	gta	aag	ctc	ctg	att	gaa	1553
Asp	Ala	Leu	Val	Leu	Asp	Arg	Val	Asp	Phe	Val	Lys	Leu	Leu	Ile	Glu	
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aac	gga	gtg	aac	atg	cag	cat	ttc	ctc	acc	atc	ccg	agg	ctg	gag	gag	1601
Asn	Gly	Val	Asn	Met	Gln	His	Phe	Leu	Thr	Ile	Pro	Arg	Leu	Glu	Glu	
			415					420					425			
cta	tac	aac	acc	aga	ctg	ggc	cca	cca	aac	acc	ctt	cat	ctg	ctg	gtg	1649
Leu	Tyr	Asn	Thr	Arg	Leu	Gly	Pro	Pro	Asn	Thr	Leu	His	Leu	Leu	Val	
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cgg	gat	gta	aag	aag	agc	aac	ctt	cca	cct	gat	tac	cac	atc	agc	ctc	1697
Arg	Asp	Val	Lys	Lys	Ser	Asn	Leu	Pro	Pro	Asp	Tyr	His	Ile	Ser	Leu	
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Ile	Asp	Ile	Gly	Leu	Val	Leu	Glu	Tyr	Leu	Met	Gly	Gly	Ala	Tyr	Arg	
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tgc	aac	tac	act	cgg	aaa	agc	ttc	cgg	act	ctc	tac	aac	aac	ttg	ttt	1793
Cys	Asn	Tyr	Thr	Arg	Lys	Ser	Phe	Arg	Thr	Leu	Tyr	Asn	Asn	Leu	Phe	
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Gln Ser Asn Met Trp Phe Leu Asp Val Leu Pro Gln Lys Pro Thr Cys
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Ala Glu Cys Asn Ser Ser Pro His Leu Ser Gln Thr Asp Ile Thr Pro
525 530 535

cct ctg ccc tgacacccag tgcagggcct cctagctttc acatgcagcc 1986
Pro Leu Pro
540

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Val Phe Gly Lys Gly Leu Ile Lys Ala Ala Met Thr Thr Gly Ala Trp
50 55 60
Ile Phe Thr Gly Gly Val Ser Thr Gly Val Val Ser His Val Gly Asp
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Ala Leu Lys Asp His Ser Ser Lys Ser Arg Gly Arg Leu Cys Ala Ile
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Gly Ile Ala Pro Trp Gly Met Val Glu Asn Lys Glu Asp Leu Ile Gly
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Glu Lys His Ile Ser Leu Gln Lys Ile Asn Thr Arg Leu Gly Gln Gly
165 170 175
Val Pro Val Val Gly Leu Val Val Glu Gly Gly Pro Asn Val Val Ser
180 185 190
Ile Val Leu Glu Tyr Leu Lys Glu Asp Pro Pro Val Pro Val Val Val
195 200 205
Cys Asp Gly Ser Gly Arg Ala Ser Asp Ile Leu Ser Phe Ala His Lys
210 215 220
Tyr Cys Asp Glu Gly Gly Val Ile Asn Glu Ser Leu Arg Asp Gln Leu
225 230 235 240

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Gln	Leu	Phe	Ala	Ile	Ile	Met	Glu	Cys	Met	Lys	Lys	Lys	Glu	Leu	Val
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Thr	Val	Phe	Arg	Met	Gly	Ser	Glu	Gly	Gln	Gln	Asp	Val	Glu	Met	Ala
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Pro	Val	Asp	Thr	Lys	Ala	Ala	Glu	Lys	Glu	Lys	Lys	Pro	Pro	Thr	Ala
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 Met Tyr Ile Arg
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 Val Ser Tyr Asp Thr Lys Pro Asp Ser Leu Leu His Leu Met Val Lys
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 Asp Trp Gln Leu Glu Leu Pro Lys Leu Leu Ile Ser Val His Gly Gly
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 Gly Leu Ile Lys Ala Ala Met Thr Thr Gly Ala Trp Ile Phe Thr Gly
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 ggt gtc agc aca ggt gtt atc agc cac gta ggg gat gcc ttg aaa gac 597
 Gly Val Ser Thr Gly Val Ile Ser His Val Gly Asp Ala Leu Lys Asp
 70 75 80
 cac tcc tcc aag tcc aga ggc cgg gtt tgt gct ata gga att gct cca 645
 His Ser Ser Lys Ser Arg Gly Arg Val Cys Ala Ile Gly Ile Ala Pro
 85 90 95 100
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 Trp Gly Ile Val Glu Asn Lys Glu Asp Leu Val Gly Lys Asp Val Thr
 105 110 115
 aga gtg tac cag acc atg tcc aac cct cta agt aag ctc tct gtg ctc 741
 Arg Val Tyr Gln Thr Met Ser Asn Pro Leu Ser Lys Leu Ser Val Leu
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 aac aac tcc cac acc cac ttc atc ctg gct gac aat ggc acc ctg ggc 789
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 Lys Tyr Gly Ala Glu Val Lys Leu Arg Arg Leu Leu Glu Lys His Ile
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 Ser Leu Gln Lys Ile Asn Thr Arg Leu Gly Gln Gly Val Pro Leu Val
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Tyr Leu Gln Glu Glu Pro Pro Ile Pro Val Val Ile Cys Asp Gly Ser	
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Ile Ile Met Glu Cys Met Lys Lys Lys Glu Leu Val Thr Val Phe Arg	
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Lys Ala Thr Glu Lys Glu Lys Lys Pro Pro Met Ala Thr Thr Lys Gly	
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cct gcc gtg agt cgg ttc cag tat ccc ttc cac gag ctg atg gtg tgg Pro Ala Val Ser Arg Phe Gln Tyr Pro Phe His Glu Leu Met Val Trp 535 540 545	1989
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gcc atg gcc cac gag tcc tcc gag agt gat ctg gtg gat gac atc tcc Ala Met Ala His Glu Ser Ser Glu Ser Asp Leu Val Asp Asp Ile Ser 585 590 595	2133
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Met Leu Leu Thr Asp Met Trp Met Gly Arg Leu Arg Met Arg Lys Asn	
665 670 675	
ccc ggc ctg aag gtt atc atg ggg att ctt cta ccc ccc acc atc ttg	2421
Pro Gly Leu Lys Val Ile Met Gly Ile Leu Leu Pro Pro Thr Ile Leu	
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Phe Leu Phe Arg Thr Tyr Asp Phe Ser Tyr Gln Thr Ser Lys	
695 700 705	
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Glu Asn Glu Asp Gly Lys Glu Lys Glu Glu Glu Asn Thr Asp Ala Asn	
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Ala Asp Ala Gly Ser Arg Lys Gly Asp Glu Glu Asn Glu His Lys Lys	
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Gln Arg Ile Ile Pro Ile Gly Thr Lys Ile Cys Lys Phe Tyr Asn Ala	
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ccc att gtc aag ttc tgg ttt tac aca ata tca tac ttg ggc tac ctg	2661
Pro Ile Val Lys Phe Trp Phe Tyr Thr Ile Ser Tyr Leu Gly Tyr Leu	
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Leu Leu Phe Asn Tyr Val Ile Leu Val Arg Met Asp Gly Trp Pro Ser	
775 780 785	
ctc cag gag tgg atc gtc atc tcc tac atc gtg agc ctg gcg tta gag	2757
Leu Gln Glu Trp Ile Val Ile Ser Tyr Ile Val Ser Leu Ala Leu Glu	
790 795 800	
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Lys Ile Arg Glu Ile Leu Met Ser Glu Pro Gly Lys Leu Ser Gln Lys	
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atc aaa gtt tgg ctt cag gag tac tgg aac atc aca gat ctc gtg gcc	2853
Ile Lys Val Trp Leu Gln Glu Tyr Trp Asn Ile Thr Asp Leu Val Ala	
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Ile Ser Thr Phe Met Ile Gly Ala Met Ala Thr Arg Ser Val Met Met	
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Ile Gly Lys Met Met Ile Asp Met Leu Tyr Phe Val Val Ile Met Leu	
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Val Val Leu Met Ser Phe Gly Val Ala Arg Gln Ala Ile Leu His Pro	
870 875 880	
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Glu Glu Lys Pro Ser Trp Lys Leu Ala Arg Asn Ile Phe Tyr Met Pro	
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Tyr Trp Met Ile Tyr Gly Glu Val Phe Ala Asp Gln Ile Asp Leu Tyr	
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Leu Met Ala Cys Tyr Leu Leu Val Ala Asn Ile Leu Leu Val Asn Leu	
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Leu Ile Ala Val Phe Asn Asn Thr Phe Phe Glu Val Lys Ser Ile Ser	
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Asn Gln Val Trp Lys Phe Gln Arg Tyr Gln Leu Ile Met Thr Phe His	
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Asp Arg Pro Val Leu Pro Pro Pro Met Ile Ile Leu Ser His Ile Tyr	
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Glu Leu Lys Arg Leu His Glu Phe Glu Glu Gln Cys Val Gln Glu His	
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Phe Arg Glu Lys Glu Asp Glu Gln Gln Ser Ser Ser Asp Glu Arg Ile	
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Arg Val Thr Ser Glu Arg Val Glu Asn Met Ser Met Arg Leu Glu Glu	
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Ile Asn Glu Arg Glu Thr Phe Met Lys Thr Ser Leu Gln Thr Val Asp	
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Leu Arg Leu Ala Gln Leu Glu Glu Leu Ser Asn Arg Met Val Asn Ala	
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Ser Ile Asn Ser Ala Asp Gly Tyr Ser Leu Tyr Arg Tyr His Phe Asn	
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Gly Glu Glu Leu Leu Phe Glu Asp Thr Ser Leu Ser Thr Ser Pro Gly	
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Val Asp Asp Leu Lys Asn Ala Glu Glu Ser Lys Leu Gly Pro Asp Ile	
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Gly Ile Ser Lys Glu Asp Asp Glu Arg Gln Thr Asp Ser Lys Lys Glu	
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Glu Thr Ile Ser Pro Ser Leu Asn Lys Thr Asp Val Ile His Gly Gln	
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Tyr Phe Pro Asp Glu Thr Ile Asn Ala Cys Lys Thr Met Lys Ser Arg	
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Ser Phe Val Tyr Ser Arg Gly Arg Lys Leu Val Gly Gly Val Asn Gln	
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Asp Val Glu Tyr Ser Ser Ile Thr Asp Gln Gln Leu Thr Thr Glu Trp	
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Gln Cys Gln Val Gln Lys Ile Thr Arg Ser His Ser Thr Asp Ile Pro	
1365 1370 1375 1380	

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Val Phe Gly Lys Gly Leu Ile Lys Ala Ala Met Thr Thr Gly Ala Trp 50 55 60
Ile Phe Thr Gly Gly Val Ser Thr Gly Val Ile Ser His Val Gly Asp 65 70 75 80
Ala Leu Lys Asp His Ser Ser Lys Ser Arg Gly Arg Val Cys Ala Ile 85 90 95
Gly Ile Ala Pro Trp Gly Ile Val Glu Asn Lys Glu Asp Leu Val Gly 100 105 110
Lys Asp Val Thr Arg Val Tyr Gln Thr Met Ser Asn Pro Leu Ser Lys 115 120 125
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Gly Thr Leu Gly Lys Tyr Gly Ala Glu Val Lys Leu Arg Arg Leu Leu 145 150 155 160

Glu	Lys	His	Ile	Ser	Leu	Gln	Lys	Ile	Asn	Thr	Arg	Leu	Gly	Gln	Gly
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Val	Pro	Leu	Val	Gly	Leu	Val	Val	Glu	Gly	Gly	Pro	Asn	Val	Val	Ser
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Cys	Asp	Gly	Ser	Gly	Arg	Ala	Ser	Asp	Ile	Leu	Ser	Phe	Ala	His	Lys
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Tyr	Cys	Glu	Glu	Gly	Gly	Ile	Ile	Asn	Glu	Ser	Leu	Arg	Glu	Gln	Leu
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Leu	Val	Thr	Ile	Gln	Lys	Thr	Phe	Asn	Tyr	Asn	Lys	Ala	Gln	Ser	His
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Gln	Leu	Phe	Ala	Ile	Ile	Met	Glu	Cys	Met	Lys	Lys	Lys	Glu	Leu	Val
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Ile	Phe	Val	Phe	Gly	Pro	His	Trp	Thr	Pro	Leu	Gly	Ser	Leu	Ala	Pro
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Pro	Thr	Asp	Ser	Lys	Ala	Thr	Glu	Lys	Glu	Lys	Lys	Pro	Pro	Met	Ala
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Thr	Thr	Lys	Gly	Gly	Arg	Gly	Lys	Gly	Lys	Gly	Lys	Lys	Lys	Gly	Lys
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Val	Lys	Glu	Glu	Val	Glu	Glu	Glu	Thr	Asp	Pro	Arg	Lys	Ile	Glu	Leu
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Met	Gln	His	Phe	Leu	Thr	Ile	Pro	Arg	Leu	Glu	Glu	Leu	Tyr	Asn	Thr
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Arg	Lys	Asn	Phe	Arg	Thr	Leu	Tyr	Asn	Asn	Leu	Phe	Gly	Pro	Lys	Arg
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Pro	Lys	Ala	Leu	Lys	Leu	Leu	Gly	Met	Glu	Asp	Asp	Glu	Pro	Pro	Ala
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Lys	Gly	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Glu	Glu	Glu	Ile	Asp	Ile
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Cys	Leu	Lys	Leu	Ala	Val	Ala	Ala	Lys	His	Arg	Asp	Phe	Ile	Ala	His
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Thr	Asp	Ala	Asn	Ala	Asp	Ala	Gly	Ser	Arg	Lys	Gly	Asp	Glu	Glu	Asn			
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Glu	His	Lys	Lys	Gln	Arg	Ile	Ile	Pro	Ile	Gly	Thr	Lys	Ile	Cys	Lys			
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Phe	Tyr	Asn	Ala	Pro	Ile	Val	Lys	Phe	Trp	Phe	Tyr	Thr	Ile	Ser	Tyr			
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Ile	Asp	Leu	Tyr	Ala	Met	Glu	Ile	Asn	Pro	Pro	Cys	Gly	Glu	Asn	Leu			
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His Ser Ser Lys Ser Arg Gly Arg Val Cys Ala Ile Gly Ile Ala Pro	
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Trp Gly Ile Val Glu Asn Lys Glu Asp Leu Val Gly Lys Asp Val Thr	
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Arg Val Tyr Gln Thr Met Ser Asn Pro Leu Ser Lys Leu Ser Val Leu	
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Lys Tyr Gly Ala Glu Val Lys Leu Arg Arg Leu Leu Glu Lys His Ile	
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Ser Leu Gln Lys Ile Asn Thr Arg Leu Gly Gln Gly Val Pro Leu Val	
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Ala	Met	Lys	Leu	Leu	Thr	Tyr	Glu	Leu	Lys	Asn	Trp	Ser	Asn	Ser	Thr	
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Gln	Thr	Ser	Lys	Glu	Asn	Glu	Asp	Gly	Lys	Glu	Lys	Glu	Glu	Glu	Asn	705	710	715
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Glu	His	Lys	Lys	Gln	Arg	Ser	Ile	Pro	Ile	Gly	Thr	Lys	Ile	Cys	Glu	740	745	750
Phe	Tyr	Asn	Ala	Pro	Ile	Val	Lys	Phe	Trp	Phe	Tyr	Thr	Ile	Ser	Tyr	755	760	765
Leu	Gly	Tyr	Leu	Leu	Leu	Phe	Asn	Tyr	Val	Ile	Leu	Val	Arg	Met	Asp	770	775	780
Gly	Trp	Pro	Ser	Leu	Gln	Glu	Trp	Ile	Val	Ile	Ser	Tyr	Ile	Val	Ser	785	790	795
Leu	Ala	Leu	Glu	Lys	Ile	Arg	Glu	Ile	Leu	Met	Ser	Glu	Pro	Gly	Lys	805	810	815
Leu	Ser	Gln	Lys	Ile	Lys	Val	Trp	Leu	Gln	Glu	Tyr	Trp	Asn	Ile	Thr	820	825	830
Asp	Leu	Val	Ala	Ile	Ser	Thr	Phe	Met	Ile	Gly	Ala	Ile	Leu	Arg	Leu	835	840	845
Gln	Asn	Gln	Pro	Tyr	Met	Gly	Tyr	Gly	Arg	Val	Ile	Tyr	Cys	Val	Asp	850	855	860
Ile	Ile	Phe	Trp	Tyr	Ile	Arg	Val	Leu	Asp	Ile	Phe	Gly	Val	Asn	Lys	865	870	875
Tyr	Leu	Gly	Pro	Tyr	Val	Met	Met	Ile	Gly	Lys	Met	Met	Ile	Asp	Met	885	890	895
Leu	Tyr	Phe	Val	Val	Ile	Met	Leu	Val	Val	Leu	Met	Ser	Phe	Gly	Val	900	905	910
Ala	Arg	Gln	Ala	Ile	Leu	His	Pro	Glu	Glu	Lys	Pro	Ser	Trp	Lys	Leu	915	920	925
Ala	Arg	Asn	Ile	Phe	Tyr	Met	Pro	Tyr	Trp	Met	Ile	Tyr	Gly	Glu	Val	930	935	940
Phe	Ala	Asp	Gln	Ile	Asp	Leu	Tyr	Ala	Met	Glu	Ile	Asn	Pro	Pro	Cys	945	950	955
Gly	Glu	Asn	Leu	Tyr	Asp	Glu	Glu	Gly	Lys	Arg	Leu	Pro	Pro	Cys	Ile	965	970	975
Pro	Gly	Ala	Trp	Leu	Thr	Pro	Ala	Leu	Met	Ala	Cys	Tyr	Leu	Leu	Val	980	985	990
Ala	Asn	Ile	Leu	Leu	Val	Asn	Leu	Leu	Ile	Ala	Val	Phe	Asn	Asn	Thr	995	1000	1005
Phe	Phe	Glu	Val	Lys	Ser	Ile	Ser	Asn	Gln	Val	Trp	Lys	Phe	Gln	Arg	1010	1015	1020
Tyr	Gln	Leu	Ile	Met	Thr	Phe	His	Asp	Arg	Pro	Val	Leu	Pro	Pro	Pro	1025	1030	1035
Met	Ile	Ile	Leu	Ser	His	Ile	Tyr	Ile	Ile	Ile	Met	Arg	Leu	Ser	Gly	1045	1050	1055
Arg	Cys	Arg	Lys	Lys	Arg	Glu	Gly	Asp	Gln	Glu	Glu	Arg	Asp	Arg	Gly	1060	1065	1070
Leu	Lys	Leu	Phe	Leu	Ser	Asp	Glu	Glu	Leu	Lys	Arg	Leu	His	Glu	Phe	1075	1080	1085
Glu	Glu	Gln	Cys	Val	Gln	Glu	His	Phe	Arg	Glu	Lys	Glu	Asp	Glu	Gln	1090	1095	1100
Gln	Ser	Ser	Ser	Asp	Glu	Arg	Ile	Arg	Val	Thr	Ser	Glu	Arg	Val	Glu	1105	1110	1115
Asn	Met	Ser	Met	Arg	Leu	Glu	Glu	Ile	Asn	Glu	Arg	Glu	Thr	Phe	Met	1125	1130	1135
Lys	Thr	Ser	Leu	Gln	Thr	Val	Asp	Leu	Arg	Leu	Ala	Gln	Leu	Glu	Glu	1140	1145	1150
Leu	Ser	Asn	Arg	Met	Val	Asn	Ala	Leu	Glu	Asn	Leu	Ala	Gly	Ile	Asp	1155	1160	1165
Arg	Ser	Asp	Leu	Ile	Gln	Ala	Arg	Ser	Arg	Ala	Ser	Ser	Glu	Cys	Glu	1170	1175	1180

Ala Thr Tyr Leu Leu Arg Gln Ser Ser Ile Asn Ser Ala Asp Gly Tyr
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 Ser Leu Tyr Arg Tyr His Phe Asn Gly Glu Glu Leu Leu Phe Glu Asp
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 Thr Ser Leu Ser Thr Ser Pro Gly Thr Gly Val Arg Lys Lys Thr Cys
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 Ser Phe Arg Ile Lys Glu Glu Lys Asp Val Lys Thr His Leu Val Pro
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 Glu Cys Gln Asn Ser Leu His Leu Ser Leu Gly Thr Ser Thr Ser Ala
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 Thr Pro Asp Gly Ser His Leu Ala Val Asp Asp Leu Lys Asn Ala Glu
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 Glu Ser Lys Leu Gly Pro Asp Ile Gly Ile Ser Lys Glu Asp Asp Glu
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 Lys Thr Asp Val Ile His Gly Gln Asp Lys Ser Asp Val Gln Asn Thr
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 Lys Leu Val Gly Gly Val Asn Gln Asp Val Glu Tyr Ser Ser Ile Thr
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